



## Effects of Foreign Exchange Rate Fluctuations on Port Terminal Operators

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### ABSTRACT

The study was carried out to investigate the effects of foreign exchange rate fluctuations on port terminal operators. Data for this study were collected through primary source which are from questionnaires. 100 questionnaires were administered to four selected terminal operators in Tin can Island and Apapa port complex in which 86 questionnaires were returned. Spearman rho correlation was used to analyse the three formulated hypotheses with the aid of computer based software known as SPSS version 21. The result showed that an increase in foreign exchange rate leads to decrease in profit of terminal operators, increase in foreign exchange rate leads to increase in operational cost and the level of unemployment. However, it was recommended that government should focus more on other sector of the economy apart from oil sales which is Nigeria's major export earnings. Recommendation was also made in the aspect of reviewing the payment policy made by the government with the terminal operators as contained in concession agreement in such a way that it will be favourable to the operators.

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### 1. Introduction

The falling of crude oil prices in 2014 which led to devaluation of naira from 155 naira per US dollar to 168 was the beginning of the fall of naira and since then, there has been a continuous fall in the value of naira against dollar.

Kurihama (2013) stated that the impact of exchange rate fluctuations on the international trade is still controversial because there is no consensus on whether the impact is negative or positive. Kurihama (2013) further explained that most studies have indicated that there is negative relationship between international trade and exchange rate fluctuations. Coppola (2017) explained that when a country is experiencing FX outflows, for example because it is an oil producer and the oil price is falling, its foreign exchange rate naturally falls. Coppola (2017) further

explained that if the central bank tries to prevent the currency exchange rate from falling, the country's FX reserves may gradually be depleted: if the country imports more than it exports, and is unable to pay for imports in its own currency, it can conceivably run out of money.

Noko (n.d) explained that exchange rate fluctuations influence domestic prices through their effects on aggregate supply and demand. Scharticles (2016) stated that the fluctuation in the exchange rate of the naira has been the reasons for various problems which the Nigeria economy has been experiencing. However, terminal operators, who are one of the stakeholders in Nigeria's maritime sector, are also faced with numerous challenges as a result of the fluctuating exchange rate on their operations.

Ortise (2017) stated that the foreign exchange challenges that Nigeria faces as a result of the fall in global oil prices is further pronounced for terminal operators as large part of their capex ( capital expenditure) and operational costs are in US dollars. It further stated that the operators' dollar denominated costs includes equipment acquisition, maintenance costs and payment of lease fees to the Nigerian Ports Authority (NPA). Ships and ports (2017) noted that the report by Deloitte revealed that 83% of terminal operators revenues are received in naira, 17% are received in US dollars. However, terminal

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operators have to constantly source for US dollars through the parallel market at very high rates in order to meet their statutory and operational obligations. Terminal handling charges (THC) which can be explained as the payment received from transferring cargo from ship/quay side to the yard for release to clearing agents or customers is the main source of revenue for the Terminal operators.

### 1.1. Problem Statement.

The effect of fluctuating foreign exchange rate on the economic growth of Nigeria is enormous which can be said to have resulted from the fall of global price of oil. However, terminal operators which are one of the major stakeholders are also faced with the challenges of fluctuating foreign exchange rate in respect to their business operations.

Yusuf (2017) identified terminal handling charges as the major revenue stream of terminal operators and further stated that the report by Deloitte, atop global accounting audit firm revealed that at the beginning of port concession in 2006, terminal handling charges collected by terminal operators was calculated to be \$232 per TEU but declined to \$180 per TEU by 2016. According to the report released by Deloitte, the terminal operation business is adversely impacted by the rise in consumer price index/inflation with the consumer price index (CPI) rising to over 177percent since 2006. It further revealed that fluctuation also impacted the value of terminal handling charges with over 224% foreign exchange (FX) depreciation between 2006 to 2016. However, the essence of this research work is to identify the implication of this foreign exchange fluctuation on the port terminal operators.

### 1.2. Objectives.

1. To determine the effect of foreign exchange fluctuation on profit of port terminal operators
2. To ascertain the effect of foreign exchange fluctuation on operational cost of port terminal operators
3. To determine the effect of foreign exchange fluctuation on the level of employment

### 1.3. Research Questions.

1. Does foreign exchange fluctuation has effect on the profit of port terminal operators
2. Has foreign exchange fluctuation influenced operational cost of port terminal operators
3. Does foreign exchange fluctuation has effect on the employment level

### 1.4. Research Hypotheses.

1. Ho1: Fluctuating exchange rate does not affect the profit margin of terminal operators
2. Ho2: Fluctuating exchange rate does not affect the operational cost of terminal operators
3. Ho3: Fluctuating exchange rate does not affect the level of unemployment

## 2. Literature Review.

### 2.1. Terminal Operators.

Terminal operators are one of the essential stakeholders in the maritime sector whose performance can significantly affect a country's trade competitiveness. Deloitte (2017) stated that increase use of the terminals creates a multiplier effect across the value chain with impact on other services such as freight forwarding, insurance and banking, haulage and logistics services. United Nations Conference on Trade and Development (2015) identified many determinants of terminal as follows: labour relations, number and types of cargo handling equipment, quality of backhaul area, port access channel, land-side access, customs efficiency, and the like.

In Nigeria, the terminal operators assumed ownership of the ports in 2006 and have made significant investments estimated at N200billion within a period of 10years (Delloite, 2017). However, the investments made by the terminal operators as identified by Delloite (2017) have been spent majorly on: equipment(such as Rubber tyred Gantry , Mobile Harbour cranes, trucks), Infrastructure( such as buildings, quay, yard and inland container depot.), lighting of terminals, automated tracking system, RTG training simulation system, generators, plants and machinery.

Nigerian Port Authority (2014) identified the functions of terminal operators as follow:

- i. Cargo handling, stevedoring, warehousing and delivery
- ii. Acquisition of cargo handling and operations related equipment
- iii. Development and maintenance of ports' superstructure
- iv. Maintenance of safety and security within the terminal
- v. Towing, mooring, bunkering, ship chandelling and ship repair.

### 2.2. Terminal Tariffs Charged By Terminal Operators.

The various tariffs charged by terminal operators on general cargoes, break bulk, containers, vehicles, palletized/unitized and charges for other services and the tariff structure depicting the currency in which these charges are made by the concerned stakeholders are identified as follow;

Terminal tariffs

- Cargo dues: general cargo, bulk cargo, container handling, vehicles
- Delivery charges: General cargo, palletized/unitized, bulk cargo, container handling, vehicles
- Storage charges: general cargo, palletized/unitized cargo (open area/enclosed area), bulk cargo, containers and vehicles
- Mechanical Equipment charges: Forklift (onboard and ashore), mobile crane(ashore), container handling
- Vehicle entry permit
- Terminal handling charges

- Document Processing and additional charges
- Additional services

### 2.3. *The Effect of Fluctuating Foreign Exchange on Terminal Operators.*

Terminal operators are faced with numerous challenges in respect to the fluctuating effect on their business operations. It must be noted that the terminal operators are now operating at a very high cost as a result of receiving less than per THC presently than they did in 2006 despite the increase in the cost of operations. Deloitte (2017) stated that although, the value of THC increased from N31850 in 2006 to N80000 in 2016, the THC dollar value equivalent decreased from \$232 in 2006 to \$180 in 2016. However, in order to meet those operational obligations, the terminal operators have to constantly source for the US dollar through the parallel market at very high rates

Also, another impact of fluctuating foreign currency on terminal operators' business as identified by Deloitte (2017) is the inability to meet the revenue targets projected during negotiations while still meeting dollar based obligations to local authorities.

### 3. Methodology.

The population of the study were terminal operators in Tin can Island and Apapa port complex. The data used for the study were primary data generated through questionnaires. The questions in the questionnaire were closed ended questions. The response format employed a 5 point likert scale (strongly agree, agree undecided, disagree and strongly disagree). One hundred were administered to four different terminal operators in Tin can Island and Apapa port complex, Lagos, Nigeria. Eighty six questionnaires were returned. Spearman's rho correlation was used to analyse the study hypotheses with the aid of computer software package for social sciences (SPSS) version 21.

### 4. Data Analysis and Discussion.

As shown in table 2 in respect to the effect of fluctuating exchange rate on the profit of port terminal operators, the result shows a moderate negative correlation of -0.567 which is significant at the 0.01 level based on 2 tailed test. This is an indication that an increase in foreign exchange rate leads to decrease in profit of port terminal operators and vice versa. Since the  $p$  value  $< 0.01$ , the null hypothesis is rejected, hence the alternative hypothesis is accepted that fluctuating exchange rate affect the profit of port terminal operators.

As shown in table 2 in respect to the effect of fluctuating exchange rate on the operational cost, the result shows a strong positive correlation of 0.848 which is significant at the 0.01 level (2 tailed). This implies there is an increase in operational cost of terminal operators as a result of increase in foreign exchange rate. Since the  $p$  value  $< 0.01$ , the null hypothesis is

rejected, hence the alternative hypothesis is accepted that fluctuating exchange rate affect the operational cost of terminal operators.

As shown in table 2 in respect to the effect of fluctuating exchange rate on the level of unemployment, the result shows a moderate positive correlation of 0.558 which is significant at the 0.01 level (2 tailed). This implies that the level of unemployment increases with increase in foreign exchange rate. Since the  $p$  value  $< 0.01$ , the null hypothesis is rejected, hence the alternative hypothesis is accepted that fluctuating exchange rate affect the level of unemployment.

### Conclusion and Recommendation.

The study has provided an insight into the effect of fluctuating foreign exchange rate on the profit of port terminal operators, operational cost and the level of unemployment in Nigeria. It is very obvious that weakening in the value of naira against major foreign currencies, especially US dollar has some negative effects on port terminal operators in Nigeria.

The findings indicate that terminal operators incur more cost in running their business as a result of weakening naira as against foreign major currencies. This has led to decline in profit of port terminal operators, however in order to adjust to this economic challenge posed by fluctuating exchange rate, the terminal operators devised a means of reducing the labour force which in turn led to increase in the level of unemployment.

It is recommended that the federal government takes holistic approach in tackling the menace of fluctuating foreign exchange rate on port terminal operators and Nigeria economy at large. There is need for the government to focus on other sector of the economy such as agricultural sector apart from oil sales which is her major export earnings.

It is also recommended that federal government review its payment policy as contained in the concession agreement with the terminal operators to allow the terminal operators to pay their dues in naira or pay their dues in naira from the income generated in naira and also pay dues in foreign currency from the income made in foreign currency as against payment of all dues to the government in foreign currency.

Table 1: Tariff Structure.

Component/type of device	Charging system			
	Basic	Unit	Payer	Currency
Cargo dues	Weight/size of cargo	Tones/cbm TEU's	Shipping line	US \$
Delivery charges	Weight/size of cargo	Tones/cbm TEU's	Cargo owner	naira
Equipment hire (onboard)	Hours of use by item	hours	Shipping line	US \$
Equipment hire(ashore)	Hours of use by item	hours	Cargo owner	Naira
Stuffing and unstuffing of Containers	Day	Tones/cbm TEU's	Cargo Owner	Naira
Weekend surcharge	day	Flat rate	Cargo Owner	Naira
Security tariff	Days	Vessel	Shipping Line	US \$
Green house levy	Environment	Tones	Cargo Owner	Naira
Facility	Weight/TEU	Tones/cbm TEU's	Cargo Owner	Naira
Terminal handling charge	Weight/TEU	20', 40'	Cargo Owner	Naira
Restow	Weight/size of cargo	Tones/cbm TEU's	Cargo Owner	Naira
Provisional cargo dues order (amend)	Manifest	Per vessel	Shipping line	US \$
Cargo delivery invoice	Manifest	Per bill of lading	Cargo owner	Naira
Tally sheet	Manifest	Per bill of lading	Cargo Owner	Naira
Manifest(amend)	Rules and regulation	Submission	Shipping line	US \$
Berthing	Rules and regulation	occupations	Shipping line	US \$
Vehicle	Rules and regulation	Non-compliance	Truck owner	Naira
Delivery instruction	Rules and regulation	Non-compliance	Cargo owner	Naira

Source: ENL Tariff Book (2017).

Table 2: Correlations.

			Nigeria has been experiencing foreign exchange fluctuation	Increase in profit with fluctuating exchange rate	Increase in operational cost with fluctuating exchange rate	Employment level is adversely affected with fluctuating foreign exchange
Spearman's rho	Nigeria has been experiencing foreign exchange fluctuation	Correlation Coefficient	1.000	-.567**	.848**	.558**
		Sig. (2-tailed)	.	.000	.000	.000
		N	86	86	86	86
	Increase in profit with fluctuating exchange rate	Correlation Coefficient	-.567**	1.000	-.643**	-.335**
		Sig. (2-tailed)	.000	.	.000	.002
		N	86	86	86	86
	Increase in operational cost with fluctuating exchange rate	Correlation Coefficient	.848**	-.643**	1.000	.745**
		Sig. (2-tailed)	.000	.000	.	.000
		N	86	86	86	86
	Employment level is adversely affected with fluctuating foreign exchange	Correlation Coefficient	.558**	-.335**	.745**	1.000
		Sig. (2-tailed)	.000	.002	.000	.
		N	86	86	86	86

\*\*. Correlation is significant at the 0.01 level (2-tailed).

Source: ENL Tariff Book (2017).

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